

# An Empirical Assessment of Interactive Use of Performance Measurement System, Organizational Learning and Firm Performance

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**Abstract-** Similar to Bisbe & Otley's (2004) critique of Simon's study regarding to the role of innovation for the improvement of firm performance using interactive use of performance measurement system (PMS), we also found that Simons (1995) did not clearly mention the role of organizational learning in the relationship between interactive use of PMS and firm performance. Thus, this study attempts to investigate the extent to which interactive use of performance measurement systems enables to enhance firm performance through organizational learning. This study was a self-administrated survey of 69 respondents from service organizations listed in the Indonesian stock exchange. Analysing data using SmartPLS, we found that interactive use of PMS has no indirect effect on the enhancement of firm performance through organizational learning rather than direct effect to firm performance. This study provides at least two contributions. First, this study clarifies Simon's argument regarding to the role of organizational learning as mediator effect of interactive use of PMS and firm performance. Second, this study adds to the literature in management accounting of studies in the service organizations because numerous authors state that there is a dearth of study in the service sector.

**Keywords:** *firm performance, interactive use of PMS, organizational learning, and service sector*

## 1. Introduction

Researchers in management accounting have found that organizational learning plays a prominent role in attaining organizational objectives (Chenhall, 2005; Henri, 2006b; Kloot, 1997; Widener, 2007). For example, Chenhall's (2005) study with respect to the Australian manufacturing companies confirms that organizational learning has a positive contribution to a sustainable competitive advantage using integrative strategic performance measurement systems. Additionally, in his book, Simons (1995) explains that the interactive use of management control systems stimulates the motivation of an organization's members to encourage learning that leads to improvement in organizational performance. Similar idea to Bisbe & Otley (2004), however, it also seems that Simons (1995) does not clearly

explain the effect of organizational learning from the interactive use of PMS and its impact on a firm's performance. Therefore, the aim of this study is to explore the role of organizational learning as a mediator effect of the relationship between interactive use of PMS and firm performance.

This research suspects that organizational learning enables to improve in firm performance via interactive use of PMS. Our reason is the belief that the use of interactive PMS can stimulates learning about strategy and aid managers to focus on the achievement of organizational goals. Additionally, interactive use of PMS as a control system can influences and guides learning processes for members of organizations (Simons, 1990, 1991). Then, we also assume that organizational learning drives a member of an organization to achieve the desired performance. The aim of organizational learning is to provide knowledge and understanding among the members of an organization in order to identify the appropriate solutions for the improvement of firm performance (Fiol & Lyles, 1985; Huber, 1991; Kloot, 1997). Thus, organizational learning is targeted at the members to improve their skills and knowledge to obtain superior performance. For example, Hult, Ketchen Jr, & David (2001) and Paladino (2007) found that organizational learning has a positive correlation with firm performance.

In summary, we contend that interactive use of PMS can encourage managers to learn and, subsequently, that the learning has an ultimate benefit to improve the organizational performance. Thus, we predict that interactive use of PMS indirectly improves firm performance through organizational learning. According to our assumption, we formulate the research question as follow:

*What is the extent to which interactive use of PMS improves firm performance through organizational learning?*

To answer our research question, we conducted a survey study of managers working in the service industries. In particular we targeted companies listed in the Indonesian stock exchange.

There are two reasons for the selection of the service sector and the stock exchange listed companies. First, in the current decade, there has been significant growth of the service sectors in the emerging countries such as India and Indonesia (Metters & Maruchek, 2007). In particular, the growth trend of the service sector in Indonesia showed the biggest contribution in terms of the gross domestic product in the period 2006-2009 in comparison to other sectors. Second, the companies listed in the Indonesian stock exchange were selected because 'all the largest and most advanced companies in Indonesia are listed in this directory' (Lau & Sholihin, 2005, p. 401).

We believe that this study provides several academic contributions. The first contribution is that this study extends the use of interactive PMS from Simons (1995). Briefly, Simons (1995) explained that interactive use of PMS stimulates two aspects: innovation and learning. The relationship between interactive use of PMS and firm performance has been investigated by Bisbe & Otley (2004). However, it is proven from the literature that the relationship between interactive use of PMS and firm performance through organizational learning is still limited. Therefore, this study contributes to the development of management accounting literature about how organizational learning mediates the relationship between interactive use of PMS and firm performance.

Another contribution of the study relates to the research field of the study, that is the service sector. Although, the importance of service sector economic contributions has previously been explicated, studies related to the service sector itself are limited (Chenhall, 2003; Collier & Gregory, 1995a, b; Shields, 1997). As an example, Chenhall (2003, p.130) revealed that 'there is a need for more research into service [...] as these entities become increasingly important within most economies'. Also, the current literature, Kihn (2010, p. 484) explains the opportunities of study in the service sector and she said that 'a number of gaps and under-researched yet important areas in the literature were identified in existing management accounting research. They include [...] service sector organizations [...]'. Thus, this study adds to the management accounting literature for studies in the service sector.

The rest of this report is divided into four sections. The next section is a literature review and provides the hypotheses development. This is followed in Section 3 by the Research Method. Section 4 provides the result of the study. Conclusion and limitations are explicated in Section 5.

## 2. Literature review and hypotheses development

### 2.1. Literature review

#### *Interactive use of PMS*

Briefly, interactive use of PMS is the 'formal information systems managers use to involve themselves regularly and personally in the decision activities of subordinates' (Simons, 1995, p. 95). Additionally, some scholars noted that interactive use of PMS enables the continuous provision of information on organizational strategy from upper management (Bisbe & Otley, 2004; Simons, 1995). One of the embedded characteristics of interactive use of PMS is that it is 'forward looking control' that has an advantage in helping and guiding an organization to achieving goals (Grafton, Lillis, & Widener, 2010). Thus, using a performance measurement system interactively has benefits for an organization by allowing it to search for and generate opportunities by enabling dialogue and debate as well as to monitor competition risks to the achievement of business strategy in terms of organizational positioning in the market place (Bisbe & Otley, 2004; Grafton et al., 2010; Widener, 2007).

#### *Organizational learning*

Organizational learning means 'the process of improving actions through better knowledge and understanding' (Fiol & Lyles, 1985, p. 803). Klood (1997) stated that organizational learning is a process of identifying problems and determining the appropriate solution as well as how the company is enabled to respond to the changes in a business environment. This process provides opportunities to improve the organizational performance (Huber, 1991; López, José, & Ordás, 2005). A key benefit of learning is an improvement in the future; without continuous learning a company will face difficulties in competing with its rivals. Numerous scholars agreed that organizational learning is essential for an organization to sustain competitive advantage (Ireland, Hitt, & Sirmon, 2003; Klood, 1997; López et al., 2005; Sinkula, 1994; Slater & Narver, 1995). In other words, the more intensive an organization learns, the more effective the organization is in achieving long-term competitiveness that in turn leads the organization to becoming faster than its competitors (De Geus, 1988; Pablos & Lytras, 2008).

### 2.2. Hypotheses development

#### *Interactive use of PMS and organizational learning*

We assume that interactive use of PMS can leverage learning. Managers use performance measurement systems interactively to stimulate learning about strategies and uncertainties (Simons, 2000). Additionally, interactive use of PMS facilitates managers to learn through dialogue and debate among members of the organization, which

may result in the improvement of organizational strategies (Simons, 1990, 1991, 1995).

As noted earlier, interactive use of PMS can assist a manager to drive the organization in achieving the business objectives through *forward looking control* of strategy opportunities (Grafton et al., 2010). These activities can be used to encourage and guide discussion among members of an organization and put the importance of learning as well (Tuomela, 2005). Therefore, according to these processes, organizations can simultaneously improve learning activities and control these learning activities to obtain organizational objectives (Simons, 1995).

Although the empirical evidence of the relationship between interactive use of PMS and organizational learning seems contradictory (see: Widener, 2007), numerous researches confirm that interactive use of PMS leverages organizational learning. Henri (2006a), for instance, found that interactive use of PMS is positively associated with organizational learning. His study was supported by previous authors such as Kloot (1997) who revealed that the use of interactive of PMS can drive strategy exploration through learning processes. According to these points of views, we propose the following hypothesis:

*H1: there is a positive relationship between interactive use of PMS and organizational learning*

#### **Organizational learning and organizational performance**

We propose that organizational learning has a positive correlation with organizational performance. This hypothesis is based on previous arguments such as that by García-Morales et al. (2011) who contended that the main purpose of organizational learning is to improve performance both in quality and quantity that can boost an organization to stimulate and recover selling and to search business opportunities. Other researchers also claim that learning is a processes to improve productivity and profitability (Balasubramanian & Lieberman, 2010). Thus, creating organizational learning culture will drive the characteristics of organizational members to become more proactive rather than reactive (López et al., 2005).

In terms of rapidly changing market competition, learning is a prominent factor for organization to maintain and adapt with the market environment (Slater & Narver, 1995). Moreover, the advantage that may be obtained by organization to learn faster is so that the organization can improve strategic capabilities in searching market opportunities and lead to the attainment of a sustainable competitive advantage (García-Morales et al., 2011). Lastly, the achievement of sustainable competitive advantage allow a broader range of opportunities for organizations to gain long-term

organizational performance benefits (García-Morales et al., 2011).

Numerous authors have conducted investigations into the relationship between organizational learning and organizational performance and they agreed that organizational learning has a positive effect on organizational performance (García-Morales et al., 2011; López et al., 2005; Montes, Moreno, & Morales, 2005; Skerlavaj, Stemberger, Skrinjar, & Dimovski, 2007; Tippins & Sohi, 2003). For example, a study conducted by Skerlavaj, Stemberger, Skrinjar, & Dimovski (2007) in Slovenian companies found that organizational learning has a tight relationship with organizational performance. The current two studies carried out by Gates & Langevin (2010) and Crook, Todd, Combs, Woehr, & Ketchen (2011) also provide similar findings.

Studies in accounting literature, not just management literature, also have similar results where organizational learning improves firm performance. One of the examples of these relationships can be found in Henri (2006a) who concluded that organizational learning can stimulate organizational performance. Based on the above explanation, we formulate a hypothesis as follow:

*H2: There is a positive relationship between organizational learning and organizational performance*

#### **Interactive use of PMS and organizational performance**

Interactive use of PMS has a prominent role in processes to support innovation, motivate a members of an organization to be more creative and to search business opportunities (Simons, 1995). Performance measures, in particular, interactive use of PMS, enable the creation of internal process to search information and develop future planning (Simons, 1995). In other words, reliance on interactive performance measures may encourage a member of an organization to be proactive to the attainment of superior organizational performance. Some studies have proven that interactive use of PMS improves firm performance. Naranjo-Gil & Hartmann's (2007) study shows that interactive use of PMS enables to shift performance through strategic change. In addition, Bisbe & Otley (2004) found that the use of interactive PMS can support an organization to improve its performance. According to above arguments, we propose the following hypothesis:

*H3: There are a positive effect of the relationship between interactive use of PMS and organizational performance.*

According to these hypothesis, Figure 1 illustrates the research framework

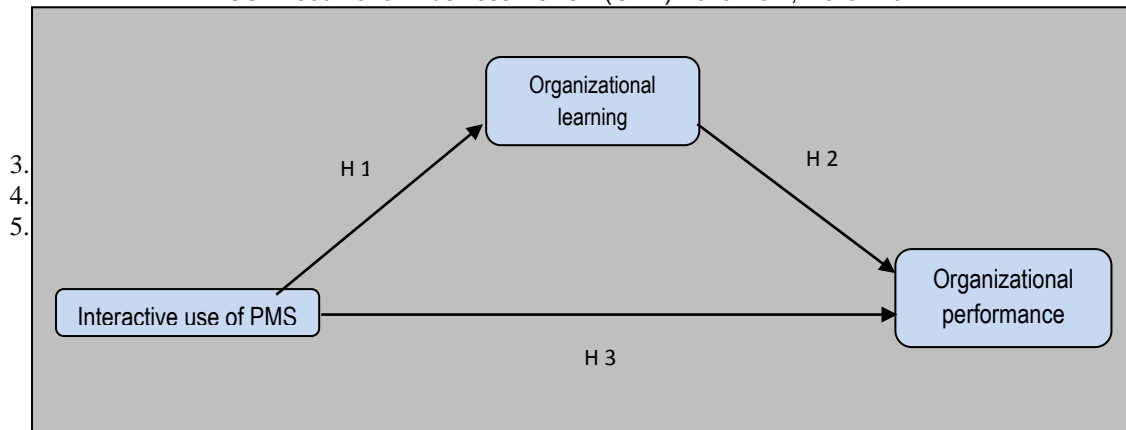


Figure 1: Research Framework

### 3. Research Method

#### 3.1. Research sample

To perform our research objectives, this study used a survey questionnaire administrated to managers in service companies listed in the Indonesian Stock Exchange (ISE). Due to financial and time constraints, all respondents in the study were managers working in the headquarters located in Jakarta, the capital city of Indonesia. It was also practical to focus on Jakarta since most companies listed in the ISE are based there. To obtain a list of companies, current addresses and contact persons, we explored the ISE's website.

We did several pilot studies before conducting the primary research. The purposes of pilot studies are to avoid the potential pitfalls that occur during a survey and to ensure that there is adequate validity and reliability from the questionnaire before it is distributed to the main respondents. For example, respondents may have problem answering a question because of difficulties in understanding the question meaning. This problem may result in higher bias and poor response rate.

The first preliminary study was related to clarity in language or structure and in the concept of the questions and accuracy of the questionnaire translation from English into Bahasa Indonesia (Holbrook, Young Ik, & Johnson, 2006). Translation into Bahasa Indonesia is necessary to make it easier for respondents to understand the meaning of the questions, which is necessary in order to minimize problems such as bias, and misunderstanding and problems in format and design terminology. These approaches are considered to enhance the response rate. The preliminary study involved several Indonesian PhD students studying in Adelaide, Australia. They were selected as they have a good understanding in both languages. In order to make it easier for them to evaluate the questions, we prepared the original questions along with the result of the translation. This allowed them to compare both versions to see the accuracy of translation and to see whether the Bahasa Indonesia version is easier to understand. As a result of this process, we obtained suggestions and some questions were amended. The second preliminary study related to

statistical study in particular to measure the validity and reliability of the data. In this study, the result of the validity and reliability was determined to be adequate and the questionnaire was ready to be distributed.

Achieving acceptable response rates are problematic with survey studies and we employed several strategies to improve this rate. We had two data collection processes: mail survey and meet respondents directly. In the mailing survey process, we followed established best practices in survey study such as pre-notification, initial mailing, first follow up, and second follow up steps. The second process, meeting respondent directly, was conducted by visiting a regular meeting of the members of targeted companies.

For distributing questionnaire to companies, we sent 2-3 sets of questionnaire to each company. The purpose of sending 2-3 sets of questionnaire to each company is that it 'permits our results to be generalized to different functions areas' (Lau & Sholihin, 2005, p. 401) and 'reduce[s] common method bias' (O'Connor, Vera-Muñoz, & Chan, 2011, p. 368).

Of the 210 questionnaires distributed, we received 72 responses and 69 (32.85%) of those being usable. Compared to previous survey studies conducted in Indonesia, this response rate is quite high since the average response rate in Indonesia is below 20% (Gudono & Mardiyah, 2000). We found that the higher response rate was generated from respondents that we visited directly in the regular meeting of the members of the companies.

#### 3.2. Variables measurement

##### 3.2.1. Interactive use of PMS

Interactive use of PMS is measured using 7-point likert scale. This instrument is developed by Abernethy & Brownell (1999) and it has been used by Bisbe & Otley (2004). In this measurement, respondent was asked to rate their perception about their performance using of four questions (see: Table 3).

##### 3.2.2. Organizational learning

Organizational learning construct uses 4-item question from Hult (1998) and Hult et al. (2000). The four questions are learning orientation question. However, numerous scholars use these questions as organizational learning both in management accounting and management fields (e.g. Henri, 2006a; Hult et al., 2001; Widener, 2007). Respondent was asked the extent to which they agree with the four questions using 7-point likert scales.

### 3.2.3. Organizational performance

Organizational performance is measured using four financial indicators: rate on assets (ROA),

rate of income/revenues, return on investments (ROI) and profitability. The first of three items was used by Yee, Yeung, & Cheng (2008), Yee, Yeung, & Edwin Cheng (2010). In addition, profitability was the most common question that has been widely used by many scholars for asking financial performance indicators (e.g. Henri, 2006a; Hyvönen, 2007; Spanos & Lioukas, 2001; Tippins & Sohi, 2003). This measurement ask respondent to rate their company performance compared to the previous year using 7-likert scale from 1 (far below average) to 7 (far above average)

Table 2 exhibits descriptive statistic of the variables in the study

Variable	N	Theoretical range		Actual score		Mean	SD
		Min	Max	Min	Max		
Interactive use of PMS	69	1	7	2	7	5.71	0.96
Organizational learning	69	1	7	1	7	5.77	1.03
Organizational performance	69	1	7	3	7	5.32	0.94

Table 2: Descriptive statistic of the variables in the study

## 4. Research findings

Before assessing structural model, firstly we analysed *explanatory factor analysis* (EFA) to see

uni-dimensionality of variables. Table 3 illustrates Factor loadings, mean, SD and Cronbach's alpha.

Table 3: Factor loadings, mean, SD and Cronbach's alpha for interactive use of PMS, organizational learning and organizational performance

Latent variable	Loadings	Mean	SD
<b>Panel A: Interactive use of PMS (<math>\alpha=0.905</math>)</b>			
I often use PMS information as a means of questioning and debating the ongoing decisions and actions of department managers.	0.897	5.81	.974
The PMS demands regular and frequent attention from managers at all levels.	0.906	5.61	.958
There is a lot of interaction between top management and department/unit managers in the PMS process	0.856	5.72	.922
I used the PMS process to discuss with my peers and subordinates changes occurring in my organization.	0.861	5.71	.987
Eigenvalue	3.113		
% Variance	77.819		
<b>Panel B: Organizational learning (<math>\alpha=0.827</math>)</b>			
Employee learning is an investment, not an expense	0.675	5.87	.969
Basic value include learning as a key to improvement	0.853	5.72	.968
Once we quit learning we endanger our future	0.861	5.58	1.230
Ability to learn is the key improvement	0.821	5.91	.935
Eigen value	2.638		
% Variance	65.957		
<b>Panel C: Performance (<math>\alpha=0.933</math>)</b>			
Rate on assets (ROA)	0.867	5.28	.873
Rate of income/revenues	0.917	5.41	.929
Return on investments (ROI)	0.904	5.26	.995
Profitability	0.920	5.32	.962
Eigen value	3.259		
% Variance	83.367		

To perform the research objectives, there are several options to be used to analysis data: structural equation modeling (SEM), multiple regression and path analysis. In this study, we choose SEM due to several reasons 1) 'SEM allows a range of relations between variables to be recognized in the analysis compared to multiple regression analysis, and those relations can be recursive, or non-recursive. 2) The ability to account for the effects of estimated measurement error of latent variables is a major difference between SEM and both path analysis and multiple regression analysis; and 3) SEM may provide a way of overcoming some of the problems and limitations inherent in multiple regression analysis' (Smith & Langfield-Smith, 2004, p. 59-60).

After selecting SEM for the study, we then consider whether use AMOS, LISREL or partial least square. PLS is chosen as a statistical tool in the study because PLS is more appropriate to be used in small sample (Chin, Marcolin, & Newsted, 2003; Fornell & Bookstein, 1982). Thus, considering 69 respondents PLS is eligible to be used. In management accounting literature, there are some scholars using PLS with sample size below 100 such as Chenhall (2005), Hall (2011), Mahama (2006), Sholihin, Pike, Mangena, & Li (2011).

Baines & Langfield-Smith (2003) revealed that analysing data using SEM has two steps: measurement model and structural model. The following section discuss these steps

#### **Measurement model**

The most common of measurement model is a testing of reliability and validity (Camisón & López, 2010; Hartmann & Slapničar, 2009; Hulland, 1999). Testing reliability can be carried out by analyzing of Cronbach's alpha and composite reliability. Based on rule of thumbs that a Cronbach's alpha that is higher than 0.7 indicates a satisfactory (Hulland, 1999). According to Table 3 and 4 that Cronbach's alpha and composite reliability each variable are higher than 0.7. It means that those variables are satisfactory.

Examining of validity using PLS can be seen from the results of convergent validity and discriminant validity. Convergent validity is calculated by seeing the score of *Average Variance Extracted (AVE)*. Henseler et al. (2009) contend that the value of convergent validity is adequate if the value of AVE exceed 0.5. Table 4 exhibits that the score of AVEs are higher than 0.6. Thus, according to statistical result, it seems that convergent validity of each variable is very good.

	AVE	Composite Reliability	Interactive use of PMS	Organizational learning	Organizational performance
Interactive use of PMS	0.775	0.932	<b>0.880</b>		
Organizational learning	0.650	0.880	0.332	<b>0.806</b>	
Organizational performance	0.814	0.946	0.487	0.260	<b>0.902</b>

Table 4: AVE, Composite validity and discriminant validity

Another validity test is discriminant validity. The aim of this measurement is to see whether the items is unique and not similar to other constructs within model (Hulland, 1999). Discriminant validity can be applied using Fornell-Larcker method. The Fornell-Larcker method is tested by comparing square roots of AVE with latent variable correlation. A rule of thumb of discriminant validity is that if score roots of AVE along with diagonal line are higher than other constructs both vertically and horizontally. Table 4 describes that all square roots of AVE are higher than diagonal lines both vertical and horizontal. Thus, discriminant validity shows very good value.

According to above discussion, we conclude that statistical results of reliability and validity of the study is adequate. Then, the next step is an assessment of structural model.

#### **Assessment of the structural model**

Structural model can be assessed using  $R^2$  and path coefficient. According to Camisón & López (2010) and Falk & Miller (1992) that the value of  $R^2$  that is higher than 0.1 is acceptable.

Another path coefficient can be carried out using *bootstrap* procedure with 500 replacements (e.g. Hartmann & Slapničar, 2009). The strong relationship between constructs occur if path coefficient exceed 0.100 (Urbach & Ahlemann, 2010). In addition, they (2010) mentioned from other study that the relationship between latent variables is acceptable if it is above 0.050. Therefore, based on these requirements the assessment of structural model of the study is satisfactory.

To conclude that both steps of structural equation modelling analysis has been done and all procedures show satisfactory. The next step is to answer the objective of this study by testing hypotheses.

#### **Testing hypotheses**

**Hypotheses** 1 says that there is a positive relationship between interactive use of PMS and organizational learning. According to Table 5 that interactive use of PMS has a positive relationship with organizational learning ( $\beta=0.322$ ,  $t = 3.583$ ,  $p < 0.01$ ). Thus, H1 is supported.

Dependent variable	Independent variable		R <sup>2</sup>
	Interactive use of PMS	Organizational learning	
Organizational learning	0.332 (3.583) ***		0.110
Organizational performance	0.450 (5.903) ***	0.111 (0.771) *	0.248

Table 5: The results of structural model: : path coefficient, t-statistic and R<sup>2</sup>

\*\*\* Significant at 1% (one-tailed)

\*\* Significant at 5% (one-tailed)

\* Significant at 10% (one-tailed)

However, the relationship between organizational learning and organizational performance of H2 does not show a positive association. This can be seen based on the results using smart PLS that are  $\beta=0.111$ , and T-statistic = 0.771, at  $p < 0.1$ . According to the findings, H2 is not supported.

In order to test Hypothesis 3, the results confirm that interactive use of PMS has a strong positive relationship with organizational performance ( $\beta=0.450$ ,  $t = 5.903$ ,  $p < 0.01$ ). Thus, H3 is supported.

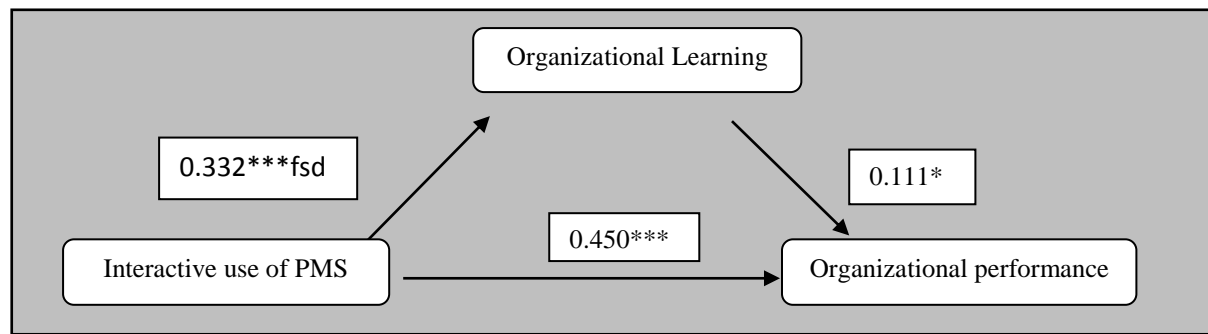


Figure 2: Structural equation modeling using PLS

\*\*\* Significant at 1% (one-tailed)

\*\* Significant at 5% (one-tailed)

\* Significant at 10% (one-tailed)

#### Path Model

According to hypotheses results, the study concludes that interactive use of PMS has a direct impact on firm performance. In other words, according statistical result that organizational learning does not provide appropriate indicators as mediator to support interactive use of PMS that enhancing firm performance.

#### 5. Conclusion, limitations and direction for further study

The primary aim of the study is to investigate the effect of interactive use of PMS in improving organizational performance through organizational learning. According to research gap ideas from previous studies, we also see that Simons (1995) did not clearly explain the relationship of organizational learning in leveraging organizational performance through interactive use of PMS. In order to test the role of organizational learning as mediator factor of these indicators, we did an investigation of service sector companies listed in the Indonesian Stock Exchange.

According to a survey study using 69 respondents, we found that organizational learning does not have an effect in improving organizational

performance via interactive use of PMS. However, interactive use of PMS has a direct effect on firm performance. The result of the study contradicts our research hypotheses. As we know that organizational learning is an essential key point for the service sector in which products and services are intangible. In addition, organizational learning helps individuals to improve skills and knowledge to provide high quality service to customers. However, if we rely on the previous study that claims the essential factor to provide higher service quality is the employee, because employees have direct interaction with customers. This doesn't apply to managers or senior managers. Thus, we assume that because this sample was targeted to managers or senior managers, the effect of organizational learning is not significant at this level to service quality. We concur with Goh (2002) who contended that knowledge from learning is highly important to improve customer satisfaction but that is effective only if it is targeted to individuals, in particular to *front-line employees*. The improvement of customer satisfaction from service quality enhances customer loyalty. Then, the enhancement of customer loyalty will result in superior organizational performance. This logic is in line with previous studies such as Heskett et al (2008), Ittner & Larcker (2003), Yee et al (2010) and



also with theory service-profit chain from Heskett, et.al (1994).

We consider that there are limitations of the study: sample size, research site and research method. First, sample size, according to a survey study we generate 69 sample size. The authors tried to avoid bias in the study by distributing 2-3 sets of questionnaire to each organization. However, some scholars mentioned that with the sample size, it is more likely to create bias. Thus, future study can extend this study by using higher sample size.

The second limitation is about research site. As pointed out earlier, this study was conducted in the service sector. Thus, to generalize the study, for example to the manufacturing industry, care should be taken. It is because numerous author suggested that manufacturing and service sector are different (e.g. Auzair & Langfield-Smith, 2005; Winata & Mia, 2005). The obvious differences between the manufacturing and service sectors are that the service sector contains intangibles, heterogeneity, inseparability of product and consumption, and perishability (Cloninger & Oviatt, 2007; Edvardsson, 2005; Zeithaml, Parasuraman, & Berry, 1985). Therefore, it is suggested that studying in broader sectors of all companies listed in the Indonesian Stock Exchange can be carried out for future study or comparing the results using the study framework between service sector and manufacturing industry.

Another limitation regards the research method. This study is a survey-based study. One limitation of survey study is the problem of internal validity (Burney, Henle, & Widener, 2009). Thus, a mixed-methods study, both quantitative and qualitative study or triangulation study, can be done for future study to enrich the result of this study and to avoid the limitation of the study (Modell, 2009). Burney, Henle & Widener (2009), for instance, suggested that triangulation method can be assessed with experimental study which can cover the internal validity pitfall of a survey study. Moreover, 'triangulation of survey-derived information inevitably will provide a richer basis of interpretation [...] in multi-country studies' (Bhimani & Langfield-Smith, 2007, p. 26).

Besides the above suggestions for further study, another study can be carried out to test the same model but one that is not targeted at managers, instead directed at the front office employee level in the same industry in as much as the service sector reputation is highly influenced by front office employees and the service they provide to customers. Different from manufacturing industry, one characteristic of the service sector is it has direct interaction between employee and customer in the service process. Thus, if an employee has been provided appropriate learning, it has an effect on the improvement of service quality and it can lead to enhance customer satisfaction. Customer satisfaction is an essential factor to improve customer satisfaction that ultimately will improve

organizational performance (Heskett et al., 1994, 2008).

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